

WHAT IS CLAIMED IS:

Sub A10

1. An electroconductive device, comprising: a pair of oppositely disposed electrodes, and a luminescence layer and an electroconductive layer disposed between the electrodes, wherein the electroconductive layer comprises a mixture of a plurality of organic compounds which are mutually structural isomers and include a major component and a minor component, the mixture comprising the major and minor components in a (major component)/(minor component) ratio of 1/1 to 9/1.

2. A device according to Claim 1, wherein the organic compounds are represented by the following formula (1):

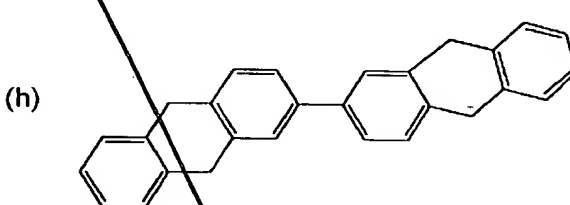
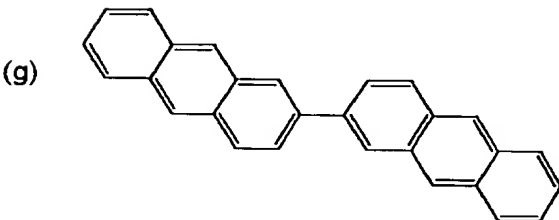
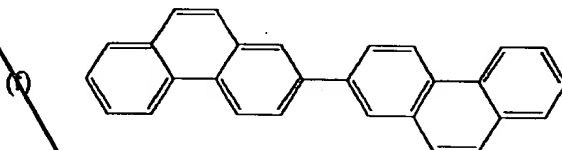
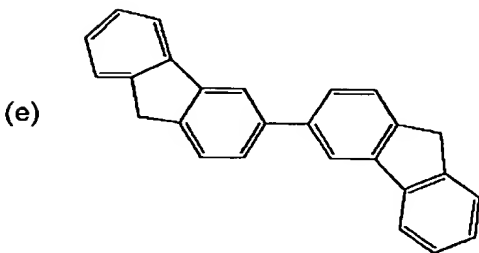
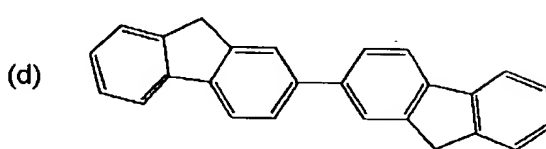
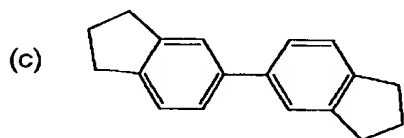
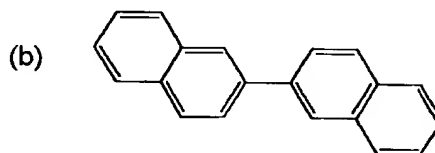
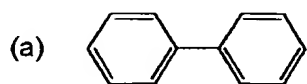
$$(R-X)_n-Ar-(X'-R')_m \quad (1),$$

wherein Ar denotes a connected ring structure comprising two single rings connected with each other via a single bond or two fused rings connected with each other via a single bond; X and X' independently denote a single bond, -O-, -S-, -OOC- or -COO-; R and R' independently denote -H, -F or a linear or branched alkyl group having 1 - 20 carbon atoms capable of including one methylene group which can be replaced with -O-, -S-, -CH=CH- or -C≡C-; and m and n are an integer of 1 - 8, with the proviso that R and R' cannot be -H at the same time when X and X' are a

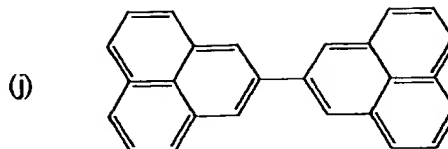
single bond.

3. A device according to Claim 1, wherein Ar in the formula (1) is a connected ring structure comprising two fused rings connected with each other via a single bond, each of said two fused rings comprising 2 - 5 rings.

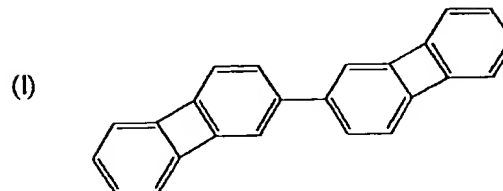
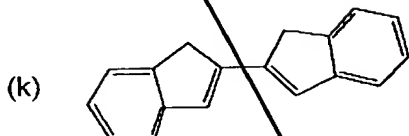
4. A device according to Claim 2, wherein Ar in the formula (1) is a connected ring structure represented by any one of the following formulas (a) to (h):



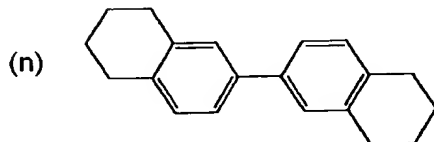
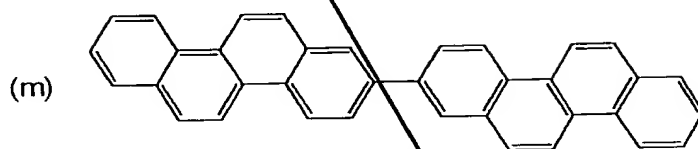
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wherein CH is optionally substituted with N or NH, and  
CH<sub>2</sub> is optionally substituted with S or O.

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5. A device according to Claim 2, wherein Ar in  
the formula (1) is a connected ring structure  
represented by the following formula (2):

A-B

(2),

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wherein A and B independently denote any one of  
phenyl-diyl, pyridine-diyl, pyrazine-diyl, pyrimidine-  
diyl, pyridazine-diyl, indene-diyl, indolizine-diyl,  
isoindole-diyl, indole-diyl, purine-diyl, naphthalene-  
diyl, quinoline-diyl, isoquinoline-diyl, quinoxaline-  
diyl, 1,5-naphthyridine-diyl, 1,6-naphthyridine-diyl,

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1,7-naphtharidine-diyl, 1,8-naphthyridine-diyl,  
quinazoline-diyl, cinnoline-diyl, pyrido[2,3-  
b]pyrazine-diyl, pyrazino[2,3-b]pyrazine-diyl,  
pteridine-diyl, biphenylene-diyl, fluorene-diyl,  
5 carbazole-diyl, thianthrene-diyl, phenalene-diyl,  
phenanthridine-diyl, phenanthrene-diyl, anthracene-  
diyl, chrysene-diyl, acridine-diyl, perimidine-diyl,  
phenanthroline-diyl, phenazine-diyl, phenothiazine-  
diyl, phenoxathin-diyl, indan-diyl, coumaran-diyl,  
10 phthalan-diyl, chroman-diyl, isochroman-diyl,  
thiachroman-diyl, isothiachroman-diyl, and  
thiaxanthene-diyl.

6. A device according to Claim 5, wherein A in  
15 the formula (2) is quinoxaline-diyl.

7. A device according to Claim 5, wherein  $R=R'$ ,  
 $X=X'$  and  $m=n=1$  are satisfied in the formula (1), and  
 $A=B$  is satisfied in the formula (2) to form a  
20 symmetric structure having a center of symmetry.

8. A device according to Claim 1, wherein the  
mixture of a plurality of organic compounds is in an  
amorphous state.

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9. An electroluminescence device, comprising: a  
pair of oppositely disposed electrodes, and a

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luminescence layer and a carrier injection layer  
and/or a carrier transport layer disposed between the  
electrodes, wherein

the carrier injection layer and/or the  
5 carrier transport layer comprises the  
electroconductive layer of the electroconductive  
device according to Claim 1.

10 10. A device according to Claim 9, wherein the  
device comprises the luminescence layer and the  
carrier injection layer disposed between the  
electrodes, the carrier injection layer being an  
electron injection layer.

15 11. A process for producing an electroconductive  
device of the type comprising a pair of oppositely  
disposed electrodes and an electroconductive layer  
disposed between the electrodes, said process  
comprising:

20 a step of forming an electroconductive layer  
comprising a mixture of a plurality of organic  
compounds between the electrodes, the organic  
compounds being mutually structural isomers and  
including a major component and a minor component;  
25 wherein

the mixture comprises the major and minor  
components in a (major component)/(minor component)

ratio of 1/1 to 9/1.

12. A process according to Claim 11, wherein the  
electroconductive layer is formed through vacuum  
5 deposition.

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